Docket No. 18617

UNITED STATES PATENT AND TRADEMARK OFFICE

VERIFICATION OF A TRANSLATION

Not entered Not page per page per instructions

I, Charles Edward SITCH BA,

Deputy Managing Director of RWS Group Ltd UK Translation Division, of Europa House, Marsham Way, Gerrards Cross, Buckinghamshire, England hereby declare that:

My name and post office address are as stated below;

That the translator responsible for the attached translation is knowledgeable in the English language and in the Japanese language, and that, to the best of RWS Group Ltd knowledge and belief, the English translation of the marked portion of the attached Japanese document is true and complete.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: February 23, 2005

Signature : C Sitch

For and on behalf of RWS Group Ltd

Post Office Address : Europa House, Marsham Way,
Gerrards Cross, Buckinghamshire,
England.

REASON 1. The inventions pertaining to the following claims of the application do not conform to Article 29, Paragraph 1, Item 3 of the Patent Law and cannot be granted patent rights in accordance therewith because they constitute inventions either disclosed in the cited documents listed below which were circulated within and outside Japan prior to the submission of the application or inventions available for public utilization by way of an electronic communication line.

REASON 2. The inventions pertaining to the following claims of the application cannot be granted patent rights in accordance with the provisions of Article 29, Paragraph 2, Item 3 of the Patent Law because, based on inventions either disclosed in the cited documents listed below which were circulated within and outside Japan prior to the submission of the application or inventions available for public utilization by way of an electronic communication line, they could have been easily invented prior to the submission of this application by a person having knowledge common to the field of technology to which the inventions belong.

NOTES (for cited documents etc. please refer to the List of Cited Documents etc.)

[Claims 1 to 6, 9, 10, 12, 14 to 17, 19 to 21, 24 to 29, 31 and 34, Reasons 1 and 2, Cited document 1]

Cited document 1 describes the manufacture of a transistor comprising a source electrode and drain electrode pattern on an SiO_2 substrate in which, employing a substrate (Fe(3nm)/Mo(10nm)/Si(10nm)/SiO_2 substrate) in which an Fe(3nm)/Mo(10nm)/Si(10mn) thin film is formed, the growth of a single-layer carbon nanotube between electrodes using a hot CVD method.

[Claim 11, Reason 2, Cited documents 1 and 2]

Even though a gate electrode is provided in the rear-surface side of the substrate in which the carbon nanotube is formed in the transistor that employs the single-layer carbon nanotube described in cited document 1, as is described in cited document 2, because transistors in which a gate electrode is provided on the upper part of a carbon nanotube is well known, the provision of a gate electrode in the upper part of the carbon nanotube in the invention described in cited document 1 is simple to devise for a person skilled in the art.

[Claim 13, Reason 2, Cited document 1]

Cited document 1 describes a transistor that employs a single-layer carbon nanotube grown between a source electrode and a drain electrode. Because it is self-evident that the direction of growth of the nanotube cannot be precisely controlled in the

manufacture of a carbon nanotube based on a CVD method, the formation of the drain electrode to enclose the source electrode and, accordingly, to increase the probability that the nanotube will form a bridge between the source electrode and the drain electrode is simple to devise for a person skilled in the art.
[Claims 22 and 32, Reason 2, Cited documents 1, 3 and 4]

Paragraphs [0060], [0061] and [0065] of cited document 3 describe, in a step for the manufacture of a carbon nanotube using the CVD method, the growth of a carbon nanotube in the direction of the electric field. In addition, paragraph [0016] of cited document 4 describes, in a first embodiment thereof, the ease of growing a carbon nanotube along an electric field line.

Because it is necessary for the carbon nanotube to be grown between electrodes in the invention described in cited document 1, the application of the techniques described in cited document 3 and cited document 4 to grow a nanotube in the direction between electrodes, in other words, the growth of a nanotube based on the provision of an electric field in the direction between the electrodes, is simple to devise for a person skilled in the art.

[Claims 23, 33, Reason 2, Cited documents 1, 5 and 6]

The scope of the patent claims of cited document 5 describes, following the reduction of PdO provided on a substrate to metal Pd using an H_2 gas which constitutes

the reducing gas and the formation of said metal Pd as a catalyst, the manufacture of a carbon fiber by the CVD method. In addition, the scope of the patent claims of cited document 6 describes, following the etching of a catalyst metal film composed of Co, Ni and Fe using a hydrogen gas plasma, the manufacture of a carbon nanotube using the CVD method.

Based on the above, the contact with a reducing gas in accordance with need in order to change the state of the catalyst metal of the invention described in cited document 1 is simple to devise for a person skilled in the art.

List of Cited Documents

1. Seizo Kinoshita and 4 others, Room-temperature Coulomb blockade characteristics produced by a position control grown carbon nanotube, Electronic Information and Communications Society Technical Research Report, 2002.01.29, Vol. 101, No. 618, p. 47-52

2. S. J. WIND, et al., Vertical Scaling of carbon nanotube field-effect transistors using top gate electrodes, APPL. PHYS. LETT., 2002.05.20, Vol. 80, No. 20, p. 3817-3819

3. Japanese Laid-Open Patent Application No. H 11-011917

4. Japanese Laid-Open Patent Application No. 2001-262343

5. Japanese Laid-Open Patent Application No. H 08-100328

6. Japanese Laid-Open Patent Application No. 2001-020072

REASON 3. This application does not comply with the requirements set forth in Article 36, Paragraph 6, Item 1 of the Patent Law in the following points of the description of the scope of the patent claims.

NOTES

(A) The inventions described in Claims 1 to 6, 8, 14 to 17, 19 to 29 and 31 to 34 do not specify that the upper part of the metal film of the catalyst carrier film is an oxide-processed or hydroxide-processed film. Even though, in the detailed description of the invention, for cases in which the upper part of the metal film of the catalyst carrier film is oxide-processed or hydroxide-processed, a description to that effect is actually given, for the cases in which the upper part of the metal film of the catalyst carrier film is not oxide-processed or hydroxide-processed, there is no actual description given to that effect. The effect of the invention of this application, for cases in which the upper part of the metal film of the catalyst carrier film is not oxide-processed or hydroxide-processed film, cannot be said to be self-evident. Accordingly, the inventions described in Claims 1 to 6, 8, 14 to 17, 19 to 29, 31 to 34 have not been described in the detailed description of the invention.

(B) The inventions described in Claims 1 to 7, 14 to 23 and 26 to 34 encompass, as the substance from which a second region is formed, a large number of elements including one or more types of elements selected from Group 2 to Group 14 of the periodic table. To that end, even though a description is given in the specification of an example in which Al is used and an

example in which Si is used as the substance from which the second region is formed, there is no description given of cases in which other substances selected from Group 2 to Group 14 of the periodic table are used. As is described in paragraph [0039] of the detailed description of the invention and embodiment 2, the substance from which the second region is formed is a significant influencing factor in the generation of a carbon nanotube. Accordingly, even though the use of Al and Si affords the effect of improved yield of the carbon nanotube, the affording of the effect of improved yield of the carbon nanotube using other materials selected from Group 2 to Group 14 of the period table cannot be said to be self-evident. Accordingly, the inventions pertaining to Claims 1 to 7, 14 to 23 and 26 to 34 are not described in the detailed description of the invention.